8/1638

PATENT
Docket No.: **19603/3340 (CRF D-2018B)**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Qiu et al.
Serial No.	:	09/597,840
Cnfrm. No.	:	6516
Filed	:	June 20, 2000
For	:	ENHANCEMENT OF GROWTH IN PLANTS

Examiner:
A. Kubelik

Art Unit:
1638

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Transmitted herewith in the above-identified application are:

[X] Request for Two-Month Extension of Time (in duplicate);

[X] Response to Restriction Requirement (5 pages);

[X] Check in the amount of $200.00 to cover the extension of time fee; and

[X] A self-addressed, prepaid postcard acknowledging receipt.

A duplicate copy of this sheet is enclosed.

Date: November 21, 2001

Edwin V. Merkel
Registration No. 40,087

Nixon Peabody LLP
Clinton Square, P.O. Box 31051
Rochester, New York 14603-1051
Telephone: (716) 263-1128
Facsimile: (716) 263-1600

Certificate of Mailing - 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date below.

11/21/01
Date

Wendy L. Harrold

PATENT

Docket No.: **19603/3340 (CRF D-2018B)**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Qiu et al.
Serial No.	:	09/597,840
Cnfrm. No.	:	6516
Filed	:	June 20, 2000
For	:	ENHANCEMENT OF GROWTH IN PLANTS

Examiner: A. Kubelik

Art Unit: 1638

RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In response to the September 7, 2001, written restriction requirement, applicants hereby elect Group II (i.e. claims 38, 39, 41, and 46-51) with traverse.

Applicants believe that the grouping of claims in the written restriction requirement is improper for a number of reasons.

Firstly, the written restriction requirement does not follow the MPEP provisions on linking claims. The present application contains a generic claim (claim 38) directed to a method of enhancing growth in plants, a sub-genus Markush claim (claim 39), sub-genus claims limited to hypersensitive response elicitor proteins or polypeptides derived from particular plant pathogens (i.e., claims 40-45), and other sub-genus claims which are generic with respect to the plant pathogen from which the hypersensitive response elicitor protein or polypeptide is derived (i.e., claims 46-51). From the written restriction requirement, it appears that the U.S. Patent and Trademark Office ("PTO") intends to treat at least claims 38, 39, and 46-50 as linking claims for Groups I-VIII, although they have not specifically been designated as such. According to MPEP § 809.03, genus claims which link together species claims should specifically be designated as linking claims at the time the restriction is made. As linking claims, they also should not be associated with any one of the linked groups. MPEP § 814.

Secondly, the asserted basis for the PTO imposition of the restriction is not relevant. The asserted basis appears to be the presence, in the application, of a number of distinct nucleotide sequences, each encoding a specific hypersensitive response elicitor protein or polypeptide (see Office Action, page 3, "[t]hese sequences are thus deemed to normally constitute independent and distinct inventions"). However, applicants do not claim even a single species of nucleic acid molecule or the use thereof. None of the pending claims recite the use of a single species of nucleic acid which encodes a hypersensitive response elicitor protein or polypeptide (i.e., not one SEQ ID No: is recited in the claims). Thus, whether individual sequences normally constitute independent and distinct inventions is irrelevant, because applicants do not claim the use of a single individual sequence.

Thirdly, the PTO has failed to satisfy its burden in demonstrating that the claimed inventions are unrelated. In the outstanding office action, the PTO recited as the appropriate test: "[i]nventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects" (citing MPEP §§ 806.04, 808.01) (emphasis added). However, the PTO went on to ignore the requirements of this test. The PTO failed to demonstrate that the inventions are not capable of use together. Applicants submit that the PTO cannot do so, because applicants have even claimed use of the inventions together (see claim 39, reciting use of "mixtures thereof"). Moreover, the PTO has failed to demonstrate that the inventions actually have different modes of operation, different functions, or different effects. Clearly, the function of each claimed method is to enhance plant growth; thus, each claimed method has the same function and effect. While the PTO has asserted that each claimed method has a different mode of operation, the PTO provided no evidence to support this assertion. Reliance on the fact that individual nucleic acid molecules are *per se* considered independent and distinct inventions is irrelevant to the presently claimed methods of enhancing plant growth, none of which recite an individual nucleic acid molecule *per se*. The PTO failed to demonstrate how, exactly, consideration of individual nucleic acids as independent and distinct inventions necessarily means that the presently claimed methods of enhancing plant growth (all of which are generic or sub-generic with respect to the hypersensitive response elicitor protein or polypeptide) constitute different modes of operation. Because the PTO failed to carry its burden, the restriction is improper and should be withdrawn.

Given the presence of generic linking claims and a sub-genus Markush group which recites the use of hypersensitive response elicitor proteins or polypeptides derived from different plant pathogens, the proper course in the instant application is to include the

claimed inventions of Groups I-VIII together in a single group, requiring only an election of species at this time. See MPEP § 808.01(a). This procedure is proper for applications containing generic or Markush-type claims, which is exactly the situation here.

Finally, applicants question the proposed classification of each group asserted in the outstanding restriction requirement. It appears the PTO recited different class/subclass designations for each group of invention as support for the proposition that examination of more than one group would constitute a burden to the PTO. In reviewing the on-line PTO classification manual, however, it appears (in most instances) each group of invention would be searchable under almost all of the cited class/subclass designations. There appears to be no basis for including one group in a particular class/subclass while excluding others.

As one example, the PTO indicated that the invention of group I, limited to the claimed method where the hypersensitive response elicitor is derived from *Erwinia chrysanthemi*, would be classified in class 800, subclass 278. The definition for class 800, subclass 278, recites: "METHOD OF INTRODUCING A POLYNUCLEOTIDE MOLECULE INTO OR REARRANGEMENT OF GENETIC MATERIAL WITHIN A PLANT OR PLANT PART. This subclass is indented under the class definition. Method for insertion of polynucleotide molecules into, or rearrangement of genetic material within a plant cell, wherein said cell is part of, or regenerated into, a plant or plant part." Based on this definition, there does not appear to be any basis for distinguishing Group I from any other group of invention in this regard. Therefore, this class/subclass should be searched for each group of invention.

As another example, the PTO indicated that the invention of Group II, limited to the claimed method where the hypersensitive response elicitor is derived from *Erwinia amylovora*, would be classified in class 536, subclass 23.7. The definition for class 536, subclass 23.7 recites: "Encodes a microbial polypeptide: This subclass is indented under subclass 23.1 [DNA or RNA fragments or modified forms thereof]. Compounds which are DNA fragments which encode specific microbial polypeptides." Based on this definition, there does not appear to be any basis for distinguishing Group II from Groups I, III-V, and VII-VIII in this regard. Therefore, this class/subclass should be searched for most groups of invention.

In yet another example, the PTO indicated that the invention of Group III, limited to the claimed method where the hypersensitive response elicitor is derived from *Pseudomonas syringae*, would be classified in class 800, subclass 298. The definition for class 800, subclass 298 recites: "Higher plant, seedling, plant seed, or plant part (i.e.,

angiosperms or gymnosperms): This subclass is indented under subclass 295 [plant, seedling, plant seed, or plant part per se]. Subject matter wherein the plant, seedling, plant seed, or plant part is a higher plant, i.e., an angiosperm or gymnosperm, both of which produce seeds." Based on this definition, there does not appear to be any basis for distinguishing Group III from any other group of invention in this regard. Therefore, this class/subclass should be searched for each group of invention.

As a further example, the PTO indicated that the invention of Group IV, limited to the claimed method where the hypersensitive response elicitor is derived from *Pseudomonas solanacearum*, would be classified in class 800, subclass 288. The definition for class 800, subclass 288 recites: "Nonplant protein is expressed from the polynucleotide: This subclass is indented under subclass 278 [see above definition]. Method wherein the polynucleotide encodes a polypeptide not originating from a plant." Based on this definition, there does not appear to be any basis for distinguishing Group IV from any other group of invention in this regard. Therefore, this class/subclass should be searched for each group of invention.

In yet another example, the PTO indicated that the invention of Group V, limited to the claimed method where the hypersensitive response elicitor is derived from *Xanthomonas campestris*, would be classified in class 435, subclass 468. The definition for class 435, subclass 468 recites: "Introduction of a polynucleotide molecule into or rearrangement of a nucleic acid within a plant cell: This subclass is indented under subclass 440 [PROCESS OF MUTATION, CELL FUSION, OR GENETIC MODIFICATION]. Processes of inserting polynucleotide molecules into or rearranging genetic material within a plant cell." Based on this definition, there does not appear to be any basis for distinguishing Group V from any other group of invention in this regard. Therefore, this class/subclass should be searched for each group of invention.

In a still further example, the PTO indicated that the invention of Group VI, limited to the claimed method where the hypersensitive response elicitor is derived from *Phytophthora*, would be classified in class 435, subclass 419. The definition for class 435, subclass 419 recites: "Plant cell or cell line, per se, contains exogenous or foreign nucleic acid: This subclass is indented under subclass 410 [Plant cell or cell line, per se]. Subject matter wherein the plant cell or cell line has been transformed by the insertion of nucleic acid which is either exogenous or foreign to it." Based on this definition, there does not appear to be any basis for distinguishing Group VI from any other group of invention in this regard. Therefore, this class/subclass should be searched for each group of invention.

In a final example, the PTO indicated that the invention of Group VII, limited to the claimed method where a mixture of nucleic acids encode different hypersensitive response elicitors, would be classified in class 800, subclass 290. The definition for class 800, subclass 290 recites: "The polynucleotide alters plant part growth (e.g., stem or tuber length, etc.) This subclass is indented under subclass 278 [see above definition]. Method wherein the polynucleotide causes the plant or plant part to be larger or smaller or to grow at a faster or slower rate than in the absence of said polynucleotide." Based on this definition, there does not appear to be any basis for distinguishing Group VII from any other group of invention in this regard. Therefore, this class/subclass should be searched for each group of invention.

In view of the foregoing, it is apparent that in most instances the basis asserted to demonstrate a burden on the PTO in searching the different classes and subclasses is inapplicable. In most instances, the recited class/subclass should be searched for each group of invention. Thus, the PTO has failed to demonstrate that a true burden exists with respect to searching the different groups of invention.

For all of the above reasons, the restriction requirement should be withdrawn in its entirety.

Should the restriction requirement be withdrawn and an election of species be imposed for purposes of search and examination, applicants hereby provisionally elect the species of hypersensitive response elicitor proteins or polypeptides which are derived from *Erwinia amylovora*. Claims reading on this provisionally elected species include claims 38, 39, 41, and 46-51.

On the basis of the foregoing, applicants respectfully request reconsideration of the outstanding written restriction requirement.

Respectfully submitted,

Date: November 21, 2001

Edwin V. Merkel
Registration No. 40,087

Nixon Peabody LLP
Clinton Square, P.O. Box 31051
Rochester, New York 14603
Telephone: (716) 263-1128
Facsimile: (716) 263-1600

R522947.1

Certificate of Mailing - 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date below.

11/21/01
Date

Wendy L. Harrold